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margarita.villagarcia@ars.usda.gov**Profile**

An agronomist with extensive experience in field, greenhouse, and laboratory plant science research. Successfully designed, executed coordinated and managed research team to develop plants with important agronomical traits. Inside my values you will find honesty, sincerity and transparency which has help me to support good interpersonal relations and to enrich furthermore my personal and professional life.

Summary of Skills

- Possess strong commitment to team environment dynamics with the ability to contribute expertise and follow leadership directives at appropriate times
- Possess outstanding communication and organizational skills.
- Demonstrated ability to efficiently prioritize a broad range of responsibilities in order to achieve maximum level of operating effectiveness.
- Multi tasking skills and has the ability to function effectively as a member of a multi-disciplinary team.
- Comfortable to work according to the situation requirements and invest extra time and effort as and when required.
- Comprehensive knowledge and experience in agricultural biodiversity, crop production, horticulture, breeding and agricultural practices.
- Knowledge of pest identification and pest control techniques.
- Expertise in greenhouse, lab and field research, data collection/analysis, and project management.

Professional Experience**2005 – Present****Plant Physiologist/Agronomist, Soybean and N Fixation Research- USDA-ARS, Raleigh, NC**

- Coordinate and manage collaborated soybean genetic resources programs. We are using exotic national and international germplasm to increase yield, develop stress tolerant hybrids, enlarge the US soybean genetic base, reduce vulnerability to new pests, and look for high nutritional quality beans. We have developed and released more than 10 very important new soybean germplasms including: ‘N97-9658’ (MGVII), ‘N97-9612’ (MGVIII), ‘N01-10974’ (MGVI), ‘N7002’, ‘N8001’, ‘N6202’, ‘NC114, and NC115’.
- Coordinate and manage experiments in the greenhouse.
- Developed a working protocol for screening soybeans for salt and aluminum tolerance, and root proliferation. Many salt tolerance lines were identified as well as the QTL’s for the major salt tolerance allele in S-100.

- Developed a sand-media culture method for screening for Aluminum tolerance. This method has helped to offset some of the practical problems of breeding for Al tolerance. From these efforts, we found that Swedish soybean cultivars have multiple stress resistance.
- Design, implement and execute field and greenhouse experiments that characterized the phenotypic traits for more than 1000 breeding lines.
- Manage and analyze data for 'yield experiments. Every year I analyzed statistically 'in house' and data from out of state collaborators for about 80 field experiments.
- Provide training on laboratory techniques, greenhouse management, field management, and data management skills to an average of 15 individuals ranging from scientist, graduates, to undergraduate students every year.
- Inspect seed fields for varietal purity, isolation and freedom from varietal and crop contaminants.
- Conduct seed inspection and draw seed samples for laboratory analysis.
- Prepare technical reports, summaries, and technique protocols.
- Developed research and laboratory safety protocols for our soybean research programs.
- Supervise hourly workers.
- Served as Collateral Duty Safety Officer for the Raleigh location.

1997-2005

Research Associate, Dept. of Crop Science, NCSU, Raleigh, NC

- Identified soybean genotypes with superior root growth under greenhouse and growth chambers.
- Identified new genetic sources of tolerance to aluminum and soil acidity that can be used in breeding programs.
- Contributed to the development of new soybean cultivars by being involved in all steps of the field and lab studies: making crosses, seed inventory, germination, seed packing, planting, note taking, and harvest.

1988-1992

Training Program Associate, Dept. of Training -International Potato Center (CIP), Lima-Peru

- Provided training on potatoes and sweet potatoes plant growth and development for national and international scientists.
- Coordinated and managed logistics for all training initiatives
- Supervised thesis research projects for undergraduate and graduate students.
- Evaluated training packages, including outline, text, and handouts written by instructors.
- Conducted research on the evaluation of sweet potato to flooding conditions under greenhouse conditions.

1982-1986

Assistant Professor, Dept. of Crop Science -National Agrarian University "La Molina", Lima-Peru

- Taught two courses: Crop production Techniques, and Root and Tuber Crops to undergraduate students.

- Trained undergraduate students in various laboratory and field techniques.
- Conducted research on germplasm characterization of the sweet potato and management of cultural practices on potato, sweet potato and cassava crops.

1981-1982

Research Assistant, Dept. of Plant Nematology and Entomology-International Potato Center (CIP)

- Evaluated the effect of different fertilizer levels and sources in controlling the multiplication of cyst nematodes in potatoes.

Education

- **Ph.D. in Horticulture**, North Carolina State University, Raleigh. June, 1996.
- **Masters of Science in Crop Production**, University of Bath, England. June, 1987.
- **Masters of Science studies in Plant Pathology**, National Agrarian University, Lima –Peru, 1982.
- **Bachelor of Science in Agricultural Engineering**, National Agrarian University, Lima –Peru. 1980.

Awards and Training:

- Scholarship from Kellogg Foundation to pursue a Ph.D. Degree in the USA (August 1991-March, 1994).
- Scholarship from British Government to pursue M. Sci. in Great Britain (1987-1988).
- International Board of Plant Genetic Resources (IBPGR), August, 1984.
- International Institute of Tropical Agriculture (IITA), Lagos, Nigeria, Nov. 1983.
- Member of Iota Chapter Pi Alpha Xi (1995).
- Member of Gamma Sigma Delta Association, Honor Society of Agriculture (1993).
- Academic record: The total credit requirement (200) for the Bachelor's degree was approved in 9 semesters instead of the standard ten semesters. Graduated within the top ten students (ranked 6th among 56 students).
- “The Essentials of OSHA Compliance”. March 19-20, 2008. Rockhurst University Continuing Education Center at the Clarion Hotel, Hillsborough, NC.
- “Managing Emotions in the Workplace and Excelling Under Pressure”. July 15th, 2008. Rockhurst University Continuing Education Center. Brownstone Hotel, Hillsborough, NC.
- “Management Skills for Technical Professionals”. April 17–19, 2007, McKimmon Center, NC State University, Raleigh, NC.
- “Manager of Environmental, Safety, and Health (MESH II)”. September 24–28, 2007, Centennial Campus, NC State University, Raleigh, NC.
- SAS short course (Programming and Data Analysis), October-November, 2005, NCSU, Raleigh, NC.
- Biotechnology Core Course (BIT 810) at North Carolina State University. Spring 2002
- Tissue Culture of Root and Tuber Crops at International Institute of Tropical Agriculture (IITA), Ibadan-Nigeria, October 31 - November 18, 1993.
- Management for Engineers and Scientists, run by the International Training Service Ltd. At Sheffield, England, October 12-30, 1987.
- Handling of Sweet Potato Germplasm in three USA states (Florida, South Carolina, and North Carolina), August 13 - September 22, 1984.

Publications

- Carter, Jr., T.E., J.W. Burton, P.E. Rzewnicki, M.R. Villagarcia, M.O. Fountain, D.T. Bowman, and E. Taliercio. 2009. Registration of 'N8101' Small-seeded soybean. *Journal of Plant Registration*.3:22-27. 4
- Jeong Dong Lee, S. Smothers, D. Dunn, M. Villagarcia, Calvin R. Shumway, T. E. Carter and J. G. Shannon. 2008. Evaluation of a Simple Method to Screen Soybean Genotypes for Salt Tolerance. *Crop Sci.* 48:2194-2200.
- Carter, Jr., T.E., J.W. Burton, M.O. Fountain, P.E. Rzewnicki, M.R. Villagarcia, D.T. Bowman, and E. Taliercio. 2008. Registration of 'N8001'. *Journal of Plant Registration*, 2:22-23.
- T. E. Carter, Jr., J. W. Burton, M. O. Fountain, P. E. Rzewnicka, M. R. Villagarcia and D. T. Bowman. 2007. Registration of 'N7002' Soybean'. *Journal of Plant Registration* 1:93-94.
- Carter, T.E., Jr., J.W. Burton, M.O. Fountain, M.R. Villagarcia, and D.T. Bowman. 2007. Registration of NC114 and NC115 small seeded soybean germplasm lines. *Crop Sci.* 47:450-451.
- Villagarcia, M., T. E. Carter, J. Shannon, H. Boerma. 2006. Salt tolerance in the genetic base of US Canadian soybean. Poster presented at ASA-CSSA-SSSA. International meeting. Nov12-16.
- G.L. Lee, T.E. Carter, Jr., M.R. Villagarcia, X. Zhou, H. R. Boerma, Z. Li, M. O. Gibbs. 2004. A Major QTL Conditioning Salt Tolerance in S-100 Soybean and Descendent Cultivars. *Theor. Appl. Genet.* 109:1610-1619.
- Carter Jr., T.E., Burton, J.W., Cui, Z., Zhou, X., Villagarcia, M., Fountain, M.O. and Niewoehner, A.S. 2003. Registration of 'N6201' soybean. *Crop Sci.* 43:1125-1126.
- Carter Jr., T.E., Burton, J.W., Bowman, D.T., Cui, Z., Zhou, X., Villagarcia, M. Niewoehner, A.S. and Fountain, M.O. 2003. Registration of 'N7001' soybean. *Crop Sci.* 43:1126-1127.
- Carter Jr., T.E., Burton, J.W., Zhou, X., Cui, Z., Villagarcia, M., Fountain, M.O., Niewoehner, A.S. and Wilder, J.F. 2003. Registration of 'N7101' soybean. *Crop Sci.* 43:1127-1128.
- Carter Jr., T.E., Burton, J.W., Zhou, X., Cui, Z., Villagarcia, M., Fountain, M.O., Niewoehner, A.S. and Wilder, J.F. 2003. Registration of 'N7102' soybean. *Crop Sci.* 43:1128-1129.
- Carter Jr., T.E., Burton, J.W., Villagarcia, M., Cui, Z., Zhou, X., Fountain, M.O., Bowman, D.T. and Niewoehner, A.S. 2003. Registration of 'N7103' soybean. *Crop Sci.* 43:1128.
- Villagarcia, M.R.; T.E Carter, Jr.; TW Rufty; C. Arellano; A.S Niewoehner; and M.R Jennette, 2001. Genotypic rankings for aluminum tolerance of soybean roots grown in hydroponics and sand culture. *Crop Science* 41:1499-1507.
- Villagarcia M.R.; W. Collins; and D. Raper. 1998. Nitrate uptake and nitrogen use efficiency of two sweetpotato genotypes during early stages of storage root formation. *J. Amer. Soc. Hort. Sci.* 123 (5): 814-820.

Thesis

- Analysis of sweet potato growth under differing rates of nitrogen fertilization, 1996. Ph.D. Thesis, North Carolina State University - USA.

- Characterization of sweet potato clones by Polyacrylamide Gel Electrophoresis (PAGE), 1987. M.Sc. Thesis, University of Bath, England.
- Control of aluminum toxicity in potato varieties (*Solanum tuberosum* L.). 1982. Agronomy Engineer Thesis. National Agrarian University, Lima-Peru.